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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,896	03/23/2001	Valentin Chartier	5974-073	7890
27383	7590	01/11/2006	EXAMINER	
CLIFFORD CHANCE US LLP 31 WEST 52ND STREET NEW YORK, NY 10019-6131			AMINI, JAVID A	
			ART UNIT	PAPER NUMBER
			2672	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/815,896

Applicant(s)

CHARTIER ET AL.

Examiner

Javid A. Amini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- *1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/11/2005.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed 10/31/2005 have been fully considered but they are not persuasive.

Applicant on page 12 of the remarks argues that the claimed inventions are directed to a method and an apparatus to identify the geometric cells of a model. Applicant specifies that the geometric cells differ from features.

Examiner's reply: The claim language in claim 1 is too broad, because it claims “.. for identifying geometric cells of a model”. Examiner refers Applicant to study fig. 4 of Qiang. In that figure Qiang identified the cells, blocks, voxels or stock (see pages 269-270) from the first object (fig. 4a with a feature of U shape) or can be called a model that made up of three rectangular blocks or cells. And each of the geometric cells associate to specific geometric feature. Examiner's comment: This analogy captured from the amended preamble of the independent claim 1.

Applicant on page 13 at forth paragraph argues that Qiang is recognized the features and the current invention is recognized the cells.

Examiner's reply: It is not clear from Applicant's statement how a cell can be recognized without using a feature of that cell. Applicant requires providing more information to clear the ambiguity of that statement. In the preamble of the claim 1 discloses “ a CAD system” also Qiang uses CAD/CAM data for manufacturing applications. It's well known to a person skill in that art to recognize a command line that receives constraints relating to geometric objects or cells in the CAD application (see the argument on page 14, last paragraph).

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Applicant on page 15 argues the Examiner's comments appear limited to the limitations of claim 1. It does not provide sufficient information to understand the basis for rejection of each claim.

Examiner's reply: *id.* It's well known to a person skill in that art to recognize a command line that receives constraints relating to geometric objects or cells in the CAD application. E.g. in claim 2 listed set of constraints, i.e. what a person skill in that art input limitations relating to cell's dimension, topology, attributes, geometrical and etc. Examiner requires more explicit information regarding claim 2's limitation to be able to compare them with CAD's command line (i.e. well known).

Applicant on bottom of page 15 and continued on page 16 argues regarding the limitations in independent claim 9. Applicant would like to know how each of those limitations is found in Qiang.

Examiner's reply: *id.* It's well known to a person skill in that art to recognize a command line that receives constraints relating to geometric objects or cells in the CAD application. The Applicant and the reference are using the CAD application, then Examiner tries to carefully distinguish between the method/apparatus of claim invention and the options that are exist in CAD application. The 11 questions on pages 15-16 raised by Applicant caused Examiner to request Applicant to provide explicit definitions for the claim languages of "geometric cell" and "geometric feature" that are in the preamble of the claim 9 and other independent claims.

Examiner incorporates by reference an "Auto CAD 2000 Bible" for informational purpose in this office action, since the Applicant and the reference are using the CAD application. The Auto CAD 2000 Bible discloses on pages 683-684 step by step a command e.g., HIDE command,

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which the 12 steps cover the approximate answers to the Applicant's questions. Unfortunately they are broadly related to the CAD application, and Examiner does not extract the significant (to easily identify a cell or set of cells of a model using simple and intuitive syntax, as Applicant discloses in specification on page 3 at last paragraph) of the claim invention over the prior art.

Examiner's interpretation for the claim language "declarative syntax" in independent claim is equivalent to "intuitive syntax" as Applicant used the term at the bottom of page 3 of the specification.

Examiner's suggestions: Applicant needs to incorporate more explicit languages toward the claim invention, and encourages Applicant to schedule an interview.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-25 rejected under 35 U.S.C. 102(b) as being anticipated by Qiang Ji, Michael M. Marefat (hereinafter refers as "Qiang").

1. Claims 1,3 5, 7,9, 11, 13, 15, 17-19, 21 and 23.

Qiang on page 265, first col. teaches that occur at different life-cycle stages of a product.

Computer-aided design (CAD), in general, refers to using computers to assist with the various functions in the design process. Engineers consider CAD data to be the data that represent a product or component: in the domain of mechanical components these are often represented as a

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set of engineering drawings or a solid model of a component, and see fig. 2 on page 268 and figs. 15, 22 that defines the specific geometric feature. Qiang on pages 266-267 teaches Features may also be classified as prismatic or rotational. The attributes associated with features may include dimension, orientation, tolerance, spatial relationship, and topologic components. That is similar to the following claim languages: "A computer system operation method for use with a CAD system in modeling objects, said method providing a means for identifying geometric cells of a model, each of said geometric cells comprising data defining a specific geometric feature with which it is associated the method comprising." Qiang on page 285, first col. teaches the following limitations: "receiving input comprising one or more constraints relating to geometric cell information," Qiang on page 274, first col. teaches In rule-based methods, rules attempt to specify a set of necessary and sufficient preconditions for the patterns found in a feature. Recognition is carried out through an inference control mechanism that determines how to apply these rules to the input data. That applies to the following limitations: " for each constraint and for each of a plurality of geometric cells of a model, processing a declarative syntax specifying at least one of said received input constraints to determine whether the cell meets the requirement of the constraint; and generating a list of geometric cells meeting the requirements of the constraints". Qiang on page 306, section 6.2 teaches in terms of input information requirements, B-Reps are currently the most popular geometric representation scheme in mechanisms for automatic recognition of features from design models. B-Rep provides a description of an object in terms of its surface and edge entities. These surface and edge entities encourage the use of pattern-matching techniques for feature recognition. However, these entities are also sensitive to feature interactions since interactions can significantly change the observed entities or their

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properties. The main advantages of this scheme are that it is unambiguous and unique (ignoring changes in tessellation) and that both the volumetric and pattern-matching techniques can easily use it.

2. Claims 2, 4, 6, 8, 10, 12, 14, 16, 20, 22, 24 and 25.

Qiang on page 286, first col. teaches these functions operate on lists of geometric entities such as faces or edges. A check for subsuming and equal features eliminates redundant features.

Parameter extraction obtains the position, orientation, and dimensions of the features. Adjacent features may be combined to form compound features for a hierarchy of features.

Qiang on page 268, second col. teaches for volumetric feature definitions, a feature interaction corresponds to an intersection of the volumes of two (or more) features. For topology-based feature definitions, an interaction corresponds to modification of the topological elements and the relationships between the elements that define each feature involved in the interaction.

Qiang on pages 267-268 illustrates attention in integrating CAD and CAPP has been the development of an intelligent interpreter of CAD data (geometric models) to obtain features.

Such an interpreter would serve to translate the low-level entities (faces) in the geometric models produced by a CAD system into a set of features suitable for manufacturing by means of an automatic feature recognition process (AFR) that would determine the features from an existing CAD-produced geometric model of a component such as a boundary representation (B-Rep), a constructive solid geometry representation (CSG), engineering drawings, and so on. We discuss geometric models of components in the next section.

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Qiang on page 266, second col. teaches Features may also be classified as prismatic or rotational.

The attributes associated with features may include dimension, orientation, tolerance, spatial relationship, and topologic components.

Qiang on page 286 teaches Feature frames consist of slots for width and height of the feature, as well as the geometry and topology that define the feature. The recognition is then performed by exhaustively searching the part frame for matches to all instances of feature frames.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A. Amini whose telephone number is 571-272-7654. The examiner can normally be reached on 8-4pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JEREMY WISEN
PRIMARY EXAMINER

Javid A Amini
Examiner
Art Unit 2672

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